

WHAT IS CLAIMED IS:

1. A method for fabricating a semiconductor device comprising the steps of:

forming a second insulation film on a first insulation film formed above a substrate and having a copper interconnection layer buried in;

forming a contact hole in the second insulation film down to the copper interconnection layer;

cleaning the substrate with the contact hole formed with a chemical liquid;

drying the substrate cleaned with the chemical liquid; and

annealing the dried substrate in a reducing atmosphere.

2. A method for fabricating a semiconductor device according to claim 1, wherein

in the step of drying the substrate, the substrate is dried by establishing a lower pressure around the substrate.

3. A method for fabricating a semiconductor device according to claim 2, wherein

in the step of drying the substrate, the substrate is dried by spin drying, and then a lower pressure is established around the substrate.

4. A method for fabricating a semiconductor device according to claim 1, wherein

the reducing atmosphere is an atmosphere containing hydrogen and/or ammonium.

5. A method for fabricating a semiconductor device according to claim 2, wherein

the reducing atmosphere is an atmosphere containing hydrogen and/or ammonium.

6. A method for fabricating a semiconductor device according to claim 3, wherein

the reducing atmosphere is an atmosphere containing hydrogen and/or ammonium.

7. A method for fabricating a semiconductor device according to claim 1, wherein

an oxygen concentration of the reducing atmosphere is equal to or less than 100 ppm.

8. A method for fabricating a semiconductor device according to claim 2, wherein

an oxygen concentration of the reducing atmosphere is equal to or less than 100 ppm.

9. A method for fabricating a semiconductor device according to claim 3, wherein

an oxygen concentration of the reducing atmosphere is equal to or less than 100 ppm.

10. A method for fabricating a semiconductor device according to claim 4, wherein

an oxygen concentration of the reducing atmosphere is equal to or less than 100 ppm.

11. A method for fabricating a semiconductor device according to claim 1, wherein

in the step of annealing the substrate in a reducing atmosphere, the substrate is annealed at a temperature equal to or more than 320°C and equal to or less than 420°C.

12. A method for fabricating a semiconductor device according to claim 2, wherein

in the step of annealing the substrate in a reducing atmosphere, the substrate is annealed at a temperature equal to or more than 320°C and equal to or less than 420°C.

13. A method for fabricating a semiconductor device according to claim 3, wherein

in the step of annealing the substrate in a reducing atmosphere, the substrate is annealed at a temperature equal to or more than 320°C and equal to or less than 420°C.

14. A method for fabricating a semiconductor device according to claim 4, wherein

in the step of annealing the substrate in a reducing atmosphere, the substrate is annealed at a temperature equal to or more than 320°C and equal to or less than 420°C.

15. A method for fabricating a semiconductor device according to claim 1, wherein

the first insulation film and/or the second insulation film is an organic film or an organosilicate film.

16. A method for fabricating a semiconductor device according to claim 2, wherein

the first insulation film and/or the second insulation film is an organic film or an organosilicate film.

17. A method for fabricating a semiconductor device according to claim 3, wherein

the first insulation film and/or the second insulation film is an organic film or an organosilicate film.

18. A method for fabricating a semiconductor device according to claim 1, further comprising the step of:

burying a metal film in the contact hole.

19. A method for fabricating a semiconductor device according to claim 2, further comprising the step of:

burying a metal film in the contact hole.

20. A method for fabricating a semiconductor device according to claim 3, further comprising the step of:

burying a metal film in the contact hole.